

REMARKS

The application included claims 1-10, 12-24, and 31 prior to entering this amendment.

Claims 3 and 6 were indicated as including allowable subject matter

The Applicant amends claim 10. No new matter is added.

The application remains with claims 1-10, 12-24, and 31 after entering this amendment.

Summary of Telephonic Examiner Interview

Applicant's Attorney spoke with Examiner Kau on January 21, 2011 to discuss the grounds of rejection of claims 1 and 10, and the arguments presented herein. No agreement was reached.

Subject Matter Indicated as Allowable

The Examiner objected to claims 3 and 6 as being dependent upon a rejected base claim, but indicated that they would be allowable if rewritten in independent form. Applicant thanks the Examiner for the indication of allowable subject matter and the proposed amendment.

While Applicant appreciates that the Examiner has indicated that these claims are allowable, Applicant respectfully declines to rewrite claims 3 and 6 in independent form on the basis that the independent claims 1 and 4, upon which they depend, are themselves allowable.

Applicant notes that the status of the claims indicated in the Disposition of Claims, while indicating that claims 3 and 6 are objected to, also indicate that claims 3 and 6 are rejected. Applicant believes the indication of claims 3 and 6 as being rejected is inadvertent, since no basis for the rejection of claims 3 and 6 was otherwise provided in the November 19, 2010 Office Action.

Claim Rejections - 35 U.S.C. § 103

The Examiner rejected claims 1, 4, and 7 under 35 U.S.C. § 103(a) over Su (U.S. Patent 6,233,011) in view of Irving *et al.* (U.S. Patent 6,658,164).

The rejection is traversed.

Claim 1 recites a method performed by a scanner, comprising:

scanning a document to determine a plurality of actual gray level values for a plurality of pixels scanned from the document;

scanning a continuous longitudinal calibration pattern while scanning the document to determine a correctional gray level value associated with the calibration pattern;

determining a compensational gray level value with respect to the actual gray level value for each of the pixels, wherein the compensational gray level value is based at least in part on the correctional gray level value and the actual gray level values for each of the pixels scanned from the document; and

compensating for image brightness in a scanned image of the document using the compensational gray level value for each of the pixels.

Su is directed to a method for compensating the gray-scale values of an image scanned by a contact sensor (Abstract). A CIS scans a white plate to determine an average white level value $G'(X)$ that is used to generate an average white-level voltage output V_p (col. 2, lines 21-26). When inputting voltage corresponding to read image data, Su discloses using the voltage output V_p to calculate the compensated gray scale values of the pixels (col. 2, lines 27-40).

Irving is directed to a calibration and correction procedure for a fingerprint scanner (Abstract). A gray level linearity calibration and correction procedure is performed at the factory and/or by field service technicians, or performed periodically by an operator (col. 2, lines 14-26).

Even if combined, the references fail to disclose the recited features.

In rejecting claim 1, the Examiner acknowledges that Su does not explicitly teach *scanning a continuous longitudinal calibration pattern while scanning the document*, and instead alleges that Irving teaches a continuous longitudinal calibration pattern (page 5 of the November 19, 2010 Office Action). Even assuming, for argument's sake, that the Examiner is correct in this assertion, Applicant respectfully submits that the proposed combination fails to disclose the recited features.

Whereas Su describes that the pixels of the image are scanned and the resulting gray-scale values are output while reading the image (col. 4, lines 34-39), both the image and the corresponding pixels are nevertheless scanned after the white plate has already been scanned to determine the average value $G'(X)$ used for gray level compensation (col. 2, lines 4-20 and col. 4, line 20-24). If Su's white plate was scanned concurrently with scanning the image, it would not be able to determine the average value $G'(X)$ before scanning the image data (col. 2, lines 27-40 and col. 4, lines 34-42).

Similarly, Irving teaches that the gray level test pattern is scanned multiple times, and the multiple scans are then averaged to generate a gray level test pattern (col. 11, lines 5-11). According to Irving, the fingerprint data is scanned after the gray level test pattern has been scanned and averaged (col. 11, lines 18-40).

Accordingly, the combination fails to disclose the features recited by claim 1 including *scanning a continuous longitudinal calibration pattern while scanning the document to determine a correctional gray level value associated with the calibration pattern*, since the gray-scale values of Su's white plate, and the test pattern of Irving, must be read prior to scanning the document or fingerprint, respectively.

The references teach away from the proposed combination.

According to Su, uniformity problems in a contact image sensor (CIS) result in a wide variation of voltage levels associated with scanning identical white pixels (col. 1, lines 27-43). Su solves this problem by scanning 20 lines of a white plate and taking an average value of the white levels for each of the 20 lines. Similarly, Irving teaches that the multiple scan lines of the gray level test pattern are averaged to eliminate noise (col. 11, lines 6-11). In both cases, the average value is determined prior to scanning the document, or fingerprint, respectively, so that each line of the scanned image can be similarly processed.

Applicant respectfully submits that Su and Irving fail to disclose how this average value could be determined if the calibration or test pattern was read while scanning the document/fingerprint. Presumably, if the calibration or test pattern were to be read while the document/fingerprint was being scanned, the variation in voltage level and/or the excess noise discussed by Su and Irving would not be eliminated during the initial scanning operation (e.g., the first 20 lines being scanned) and the resulting scanned image would include these deficiencies. Accordingly, the references, both alone and in combination, teach away from the features recited by claim 1, including *scanning a continuous longitudinal calibration pattern while scanning the document to determine a correctional gray level value associated with the calibration pattern*.

The proposed combination requires the use of Impermissible Hindsight

Su operates similarly as described in Applicant's Background, where a calibration plate is scanned prior to scanning a document. Irving discloses performing the calibration process by a technician, at the point of manufacture, or periodically. When the calibration process is performed in Irving, it is also performed prior to scanning the fingerprint.

Applicant respectfully submits that combining the references in the manner proposed by the Examiner would only be obvious with the benefit of impermissible hindsight and in view of Applicant's own specification. As discussed above, there is no teaching or suggestion in the cited references for *scanning a continuous longitudinal calibration pattern while scanning the document to determine a correctional gray level value associated with the calibration pattern*, as recited by claim 1.

The Examiner rejected claims 2, 5, 8-10, 12-24, and 31 under 35 U.S.C. § 103(a) over Su and variously in view of Irving, Lee *et al.* (U.S. Patent 6,178,015), Rykowski *et al.* (U.S. Patent 6,975,775), and Liu (U.S. Patent 7,492,488).

Whereas the rejection is traversed, Applicant amends claim 10 only to expedite prosecution, and without prejudice to pursuing the claims as previously presented or in other forms. Amended claim 10 recites, in part, an apparatus comprising:

a processor configured to:
determine a correctional gray level value based at least in part on a scanned image of the reference pattern, wherein the reference pattern and the document are scanned at the same time.

In addition to the references of Su and Irving, the Examiner further cited Liu in rejecting claim 10. Liu discloses storing the calibration data, when the scanner is powered on or at the point of manufacture, so that the calibration data does not need to be separately obtained for each subsequent scan (col. 4, lines 10-18). Accordingly, Liu is yet another example method, as described in Applicant's Background, where a calibration plate is scanned prior to scanning a document. Accordingly, the proposed combination fails to disclose *wherein the reference pattern and the document are scanned at the same time*, as recited by claim 10.

Although of different scope than claims 1 and 10, independent claims 7 and 19 recite certain features similar to those discussed above in claims 1 and 10, such that the comments

directed to claims 1 and/or 10 also apply to claims 7 and 19. As claims 2, 5, 8, 9, 12-18, 20-24, and 31 depend directly or indirectly from independent claims 1, 7, 10, or 19, the comments and revisions directed above to claims 1, 7, 10 and 19 apply equally to claims 2, 5, 8, 9, 12-18, 20-24, and/or 31, respectively. In addition, claims 2, 5, 8, 9, 12-18, 20-24, and 31 recite further subject matter. Accordingly, reconsideration and withdrawal of the rejection of claims 1, 2, 4, 5, 7-10, 12-24, and 31 is respectfully requested.

Any statements made by the Examiner that are not addressed by the Applicant do not necessarily constitute agreement by the Applicant. In some cases, the Applicant may have amended or argued the independent claims thereby obviating grounds for rejection of the dependent claims.

CONCLUSION

For the foregoing reasons, the Applicant respectfully requests reconsideration and allowance of the present application. The Examiner is encouraged to telephone the undersigned at (503) 546-1812 if it appears that an interview would be helpful in advancing the case.

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Respectfully submitted,

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A handwritten signature in cursive script, reading "Bryan Kirkpatrick", written in black ink.

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